



United States Army

LOGISTICS INTEGRATION AGENCY



**LIA Rock Drill Laboratory
2 June 1999**

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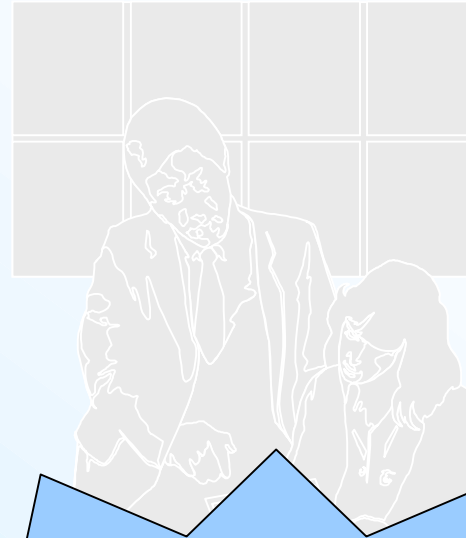
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Thank You!!

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**Outstanding Senior
Leadership Support
and Encouragement**



Background

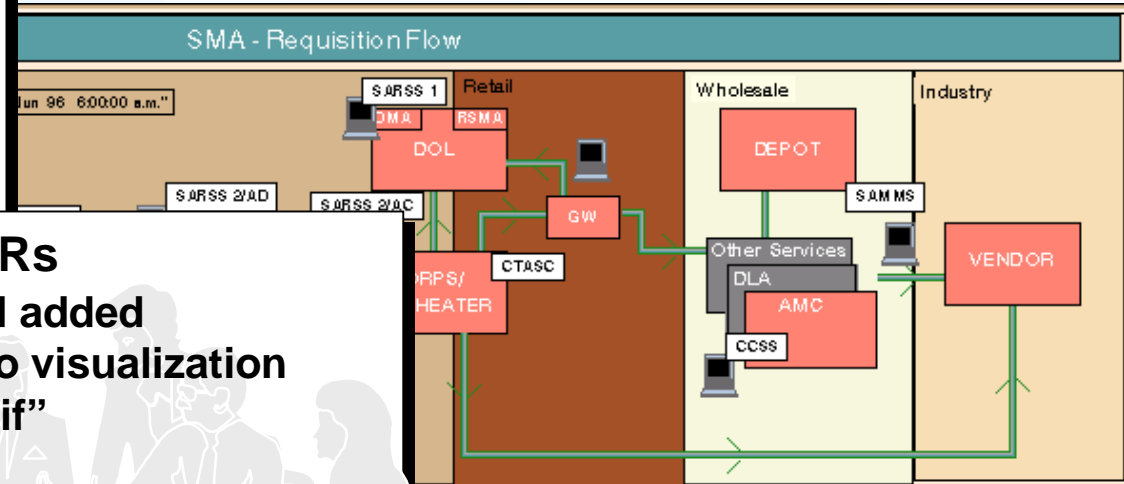
Rock Drill

Visualization of Class IX supply process, materiel flow and financial interfaces

IPRs

- Demonstrated added mathematics to visualization and the “what if” capability
- Interim Credit Policy and SSF
- Class V and Depot Maintenance processes

A cost effective,
non disruptive means
of doing BPR
analyses



DCSLOG Guidance

- Continue to work with PM-SSF and other staff to provide policy insights
- Continue working Class V and Depot Maintenance
- Continue to market capabilities
- Provide CD-ROM to trainers



LIA Rock Drill Laboratory Objectives

**Provide a cost effective, non disruptive means of testing and experimenting with policy, procedures and technology insertion in a virtual environment
i.e. Reengineering Lab**

Improve understanding of the existing process --possibly leading to immediate improvements

Identify areas needing improvement (bottlenecks)

Identify potential problems associated with implementing new policy, procedures and technology

Identify potential efficiencies of new ideas in terms of cost / time

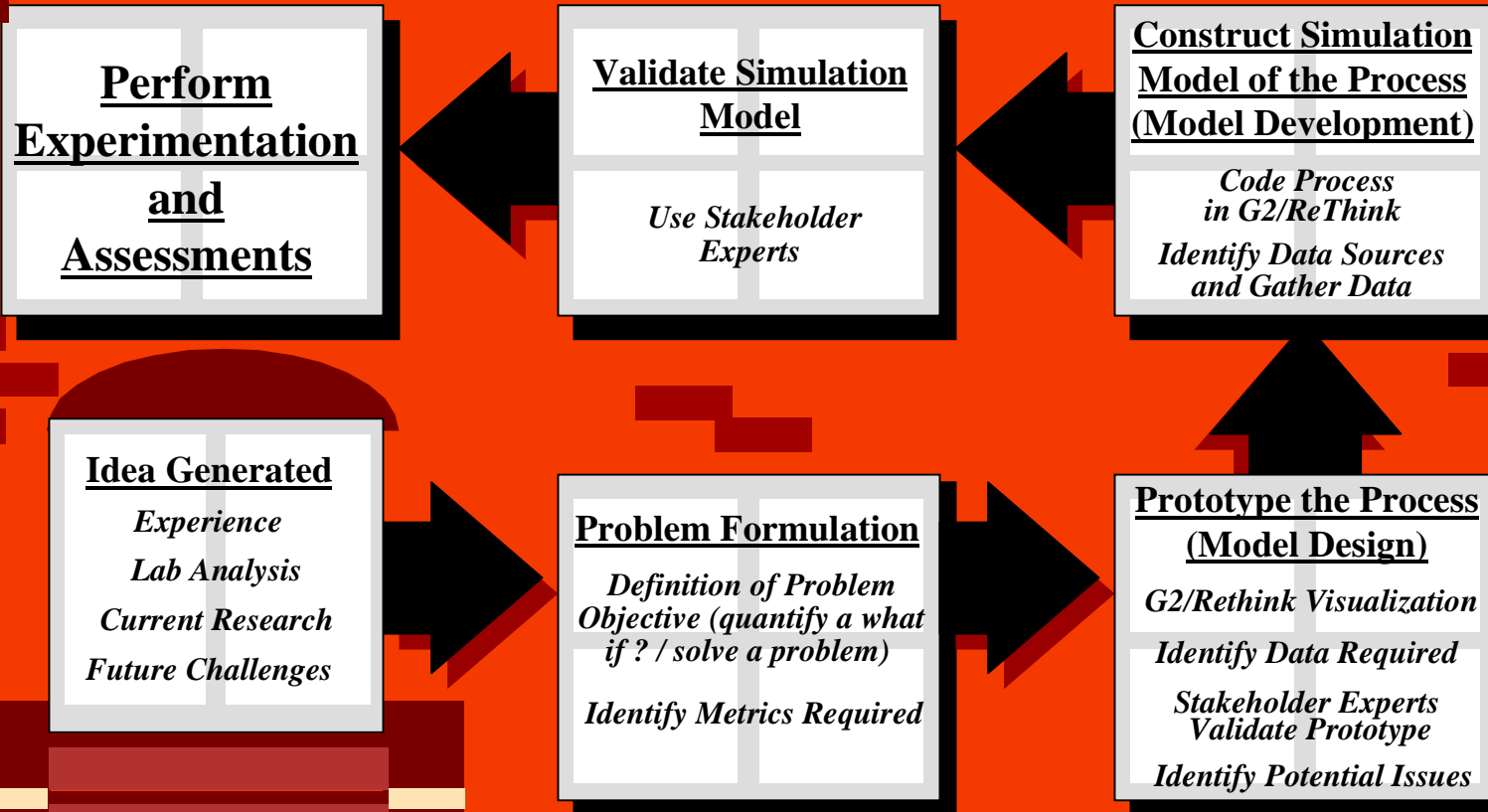
Creating capability

Not software to “sit on the shelf”



LIA Rock Drill Laboratory Approach

Reengineering Lab



Develop “as is” base models

Proficiency in G2/ReThink

Proficiency in process modeling and simulation

Foundation

Data links/warehouse

Stakeholder functional expertise



Modern Simulation Technology

Think it
See it
Test it
Do it

- **Gensym's G2/ReThink software tool**
- **Design:**
 - Provides an "electronic canvas" to do hands-on modeling
 - Quick graphical way to see processing task sequences and interdependencies.
- **Discrete Event Simulation:**
 - Measure the performance of existing & proposed business processes.
 - "What if" analysis - test re-engineering ideas before implementation -- Questions like:
 - "How will restructuring impact my cycle-time and stockage requirements?"
 - "How much will throughput increase if I add additional resources?"
- **Process data:**
 - Input data can be simulated or loaded from external files and databases so that historical process data can drive the models.
 - Output data can be captured and displayed as it's developed or stored in external files for in depth analysis.



Verification & Validation

Definitions

Verification - model operates as intended

Validation - model is an acceptable representation of the “real world” system

Approach

Verification

- “Face validation” methodology: SMEs review the visualization of the process to determine if it represents the Army process
- “Structured walk through” methodology: all members of the modeling team walk step-by-step through the computer program

Validation

- “Historical data” methodology: comparing actual data with data produced by the model
- “Sensitivity Analysis” methodology: changing the values of inputs or parameters to determine whether the effect on the model’s output is reasonable and expected



Applications

Class IX

- Single Stock Fund
- Interim Credit Policy
- Low Dollar Value Excess Policy
- Root Causes of Excess
- Repair vs. Long Supply Pricing
- Affect of Apache PVS on AWCF

Maintenance

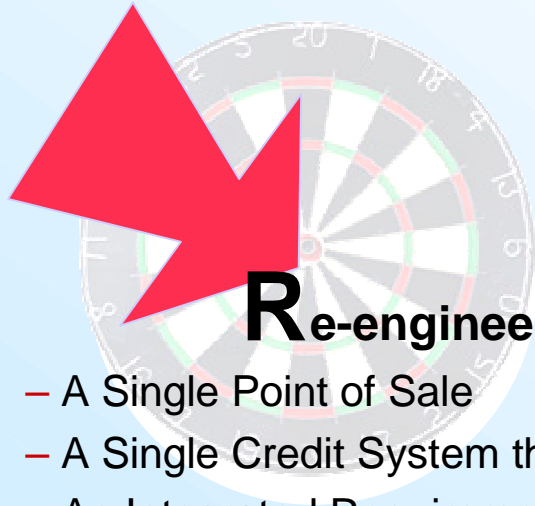
- Depot Maintenance Planning Process Redundancies
- Depot Maintenance Parts Problems
- PMCS/5988-E
- National Maintenance Manager

Class V

- Installation Ammunition Management System
- Just-In-Time Distribution
- Stock Reduction



Single Stock Fund Project



Re-engineer logistics and financial functions to give the Army:

- A Single Point of Sale
- A Single Credit System that is simple, needs based & gradually de-links credit from OPTEMPO
- An Integrated Requirements Determination System
- A National manager responsible for supply, maintenance & finance

Rock Drill Lab Objectives

- Develop and use credible, quantitative tools to test SSF business rules prior to and during field testing
- Facilitate common understanding of end-to-end “As Is” and “To Be” business processes



Single Stock Fund Project

- **Accomplishments:**

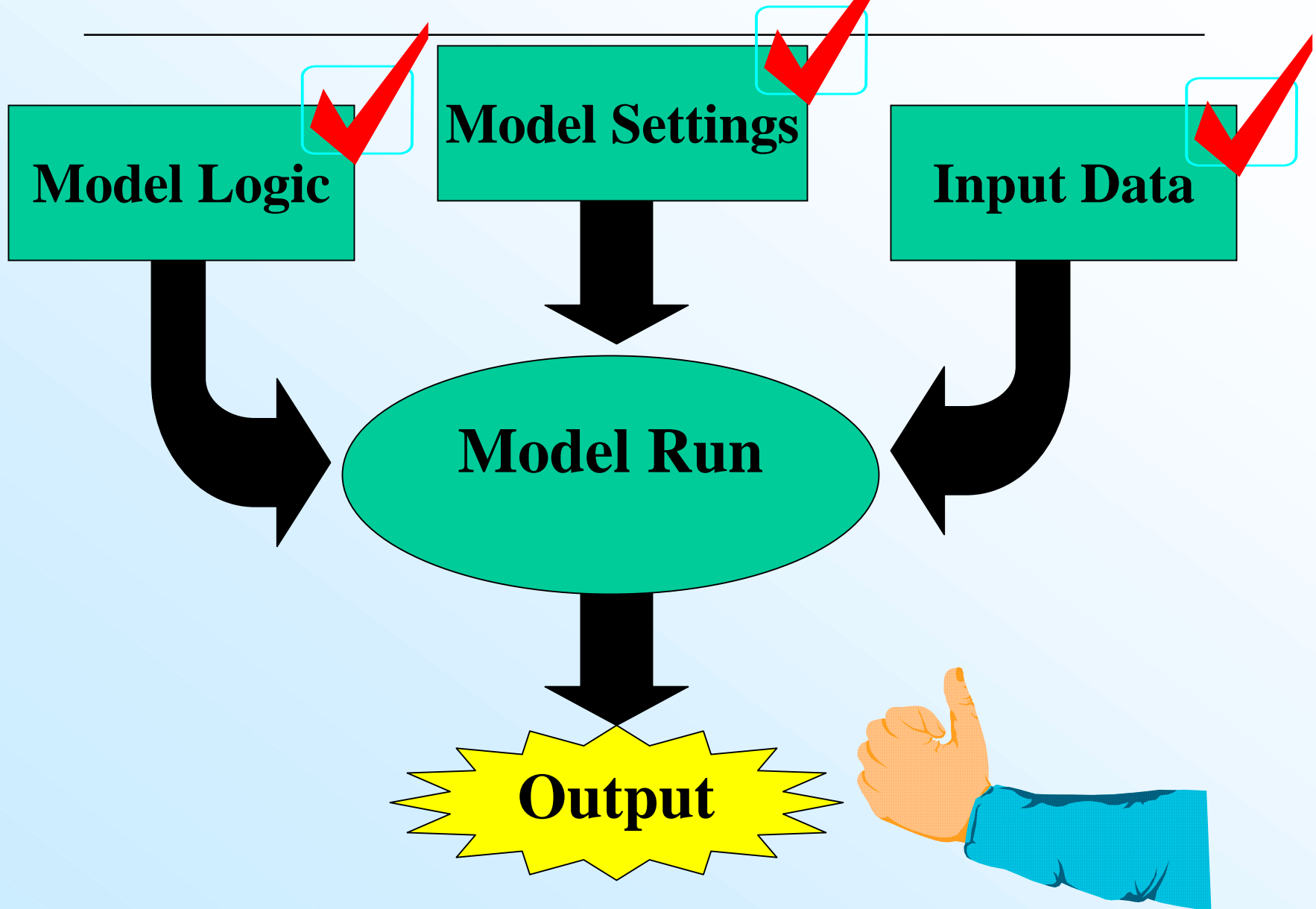
- Developed & validated Forces Command (FORSCOM) “As Is” and “To Be” models and ran 1 years worth of data for Ft Campbell and Ft Stewart to test initial business rules and estimate
- Developed & validated Training & Doctrine Command (TRADOC) models
- Tailored models for Ft. Sill & Ft. Lewis
- Developed visualization of the Army Material Command (AMC) model for Redstone Arsenal Support Activity

- **To Do:**

- Execute model for SSF demonstration sites (Ft. Sill / Ft. Lewis / Redstone Arsenal Support Activity)
- Incorporate features needed to test integrated requirements determination and integrated maintenance

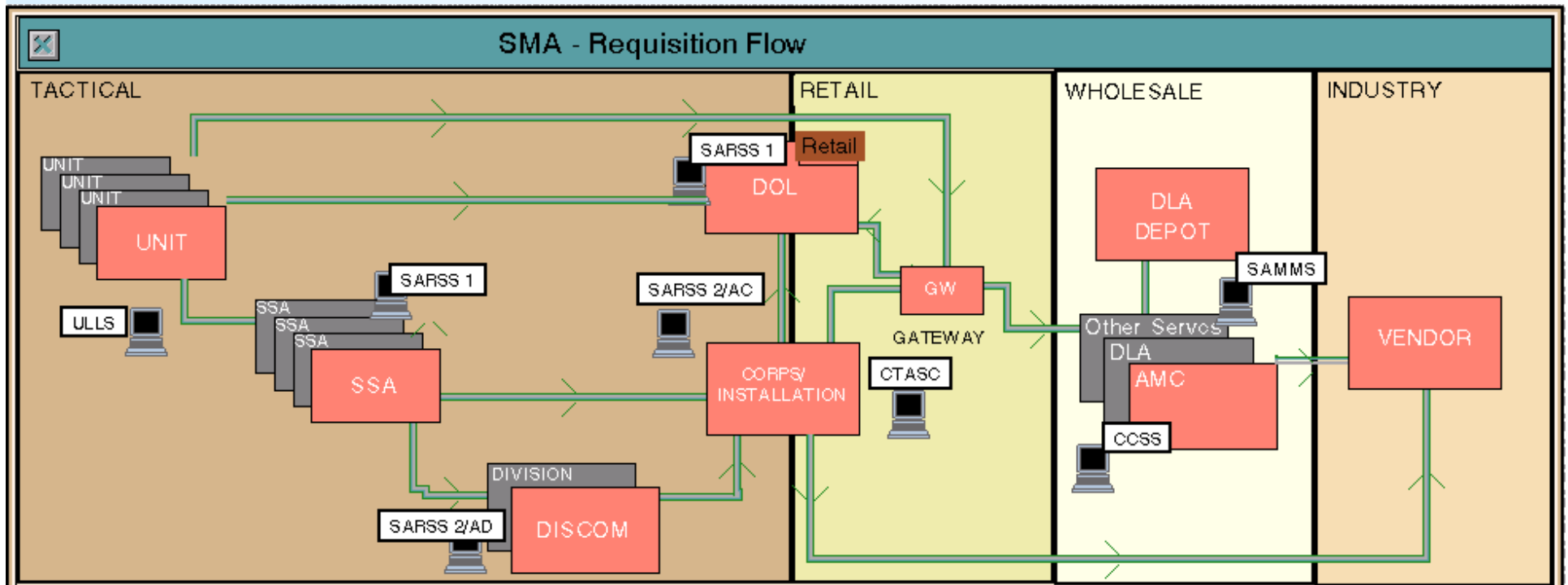


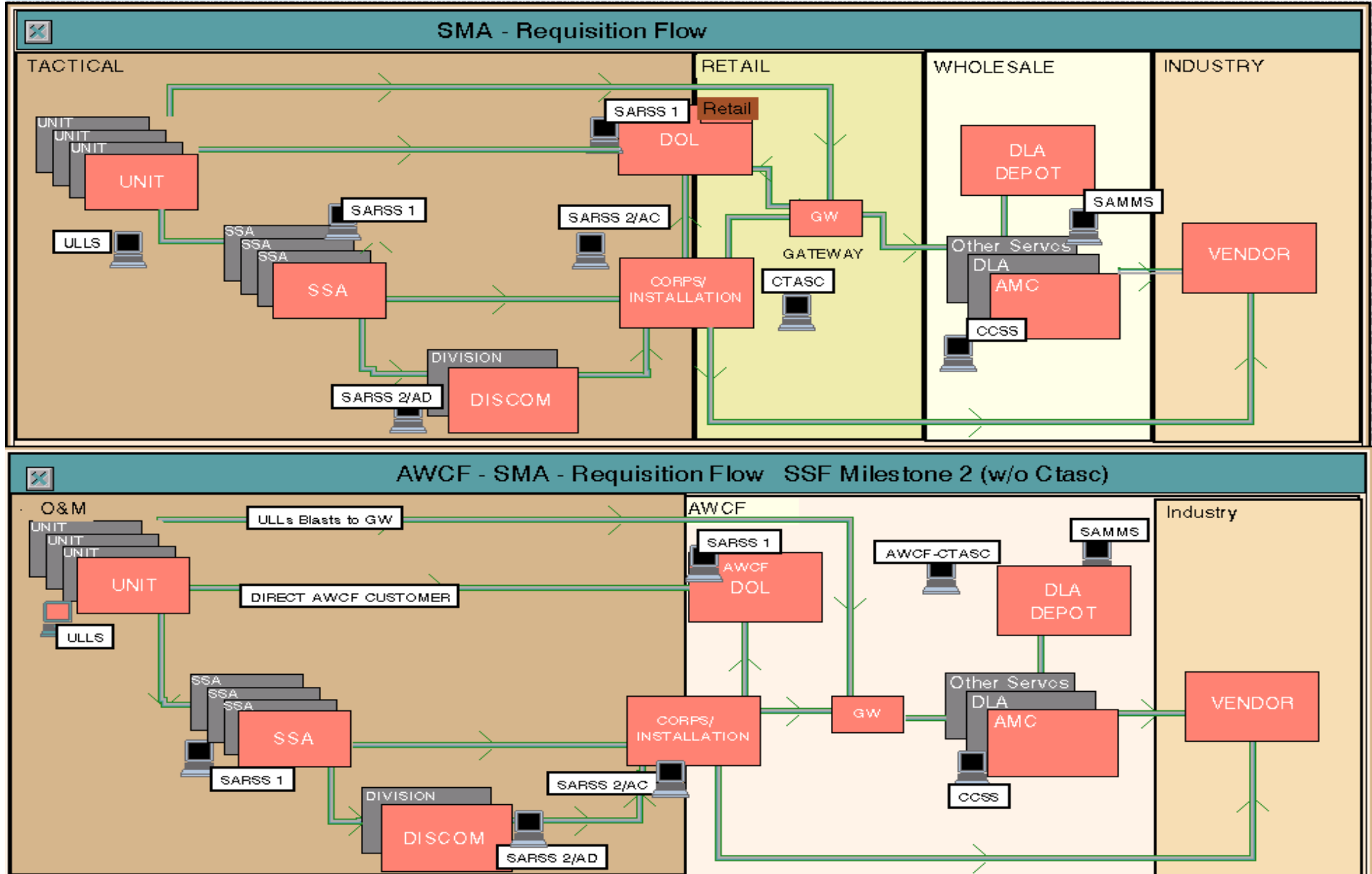
Model Run Approach





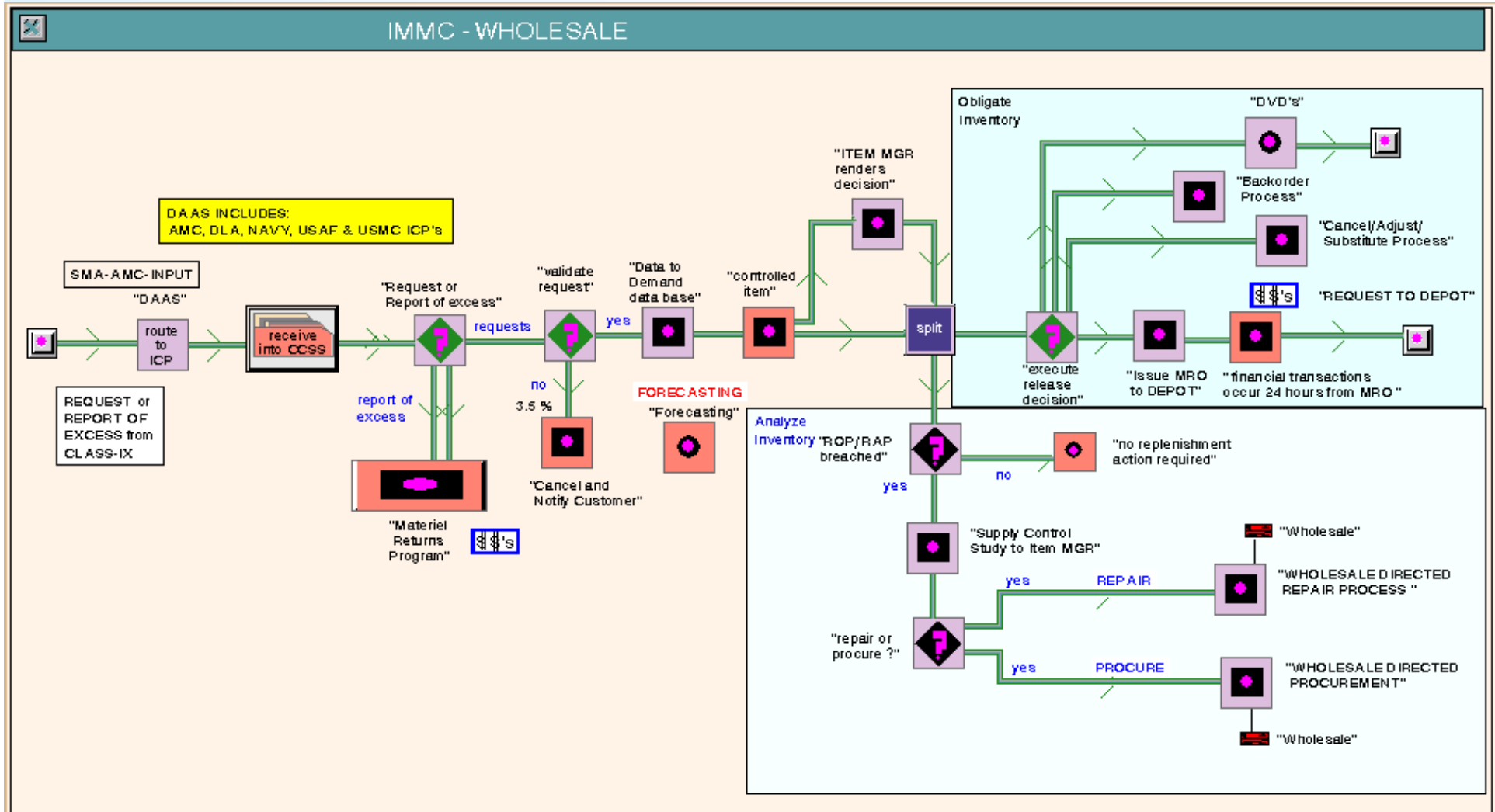
Class IX - “As Is” Requisition Flow







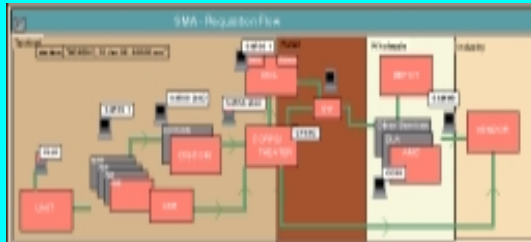
Class IX - Wholesale



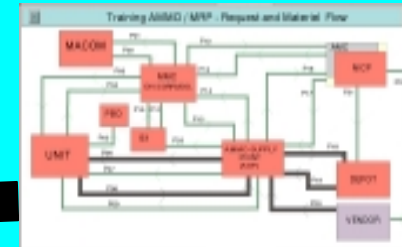


Integrated Vision

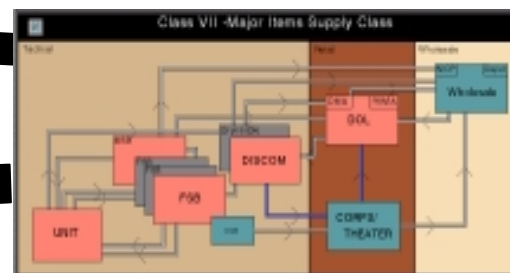
Class IX



Class V

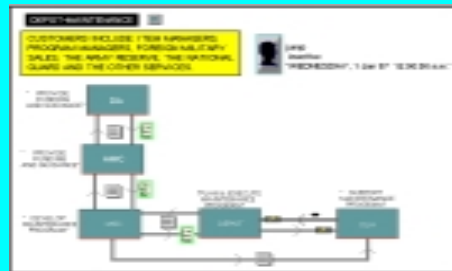


Class VII



OPTEMPO

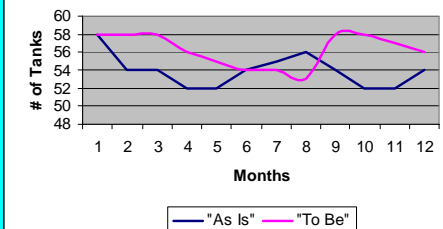
Maintenance



Class III



Tank Bn Availability



**Matériel
Transportation Systems
Unit Deployment**